

SPAN		HIGHT		REINFORCING STEEL											QUAN./LF		HEADWALLS							WINGWALL		
(FT.)	(FT.)	SIZE	SPACING C-C	a	b	c	d	e	f	g	LENGTH	NO. BL1 BARS	NO. BL2 BARS	REINFORCING STEEL (LBS./LONG. JT)	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL (LBS./LF)	HEADWALL LENGTH	SIZE	LENGTH	NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. A4 (CY)	INLET REINFORCING STEEL (LBS)		OUTLET CONCRETE CL. A4 (CY)	OUTLET REINFORCING STEEL (LBS)
3	3	4	12"	2'- 8 5/8"	0'- 5"	1'- 6 5/8"	0'- 6 1/2"	0'- 4 1/4"	7'- 7 1/8"	-----	7'- 11"	32	12	30.956	0.719	79.885	9'- 6"	6	9'- 2"	1	4	1.430	67.988	1.422	55.073	A
3	4	4	12"	2'- 8 5/8"	0'- 5"	1'- 6 5/8"	0'- 6 1/2"	0'- 4 1/4"	7'- 7 1/8"	-----	7'- 11"	32	18	33.074	0.793	86.149	9'- 6"	6	9'- 2"	1	5	1.529	71.439	1.515	55.073	C
4	3	4	12"	3'- 5 1/8"	0'- 7 1/4"	1'- 8 3/4"	0'- 9 3/4"	0'- 6 1/2"	9'- 8"	-----	10'- 1"	40	12	37.636	0.962	94.692	11'- 6"	6	11'- 2"	1	4	1.622	80.004	1.621	67.089	B
4	4	4	12"	3'- 5 1/8"	0'- 7 1/4"	1'- 8 3/4"	0'- 9 3/4"	0'- 6 1/2"	9'- 8"	-----	10'- 1"	40	18	39.754	1.036	100.956	11'- 6"	6	11'- 2"	1	5	1.721	83.455	1.714	67.089	D
4	5	4	12"	3'- 5 1/8"	0'- 7 1/4"	1'- 8 3/4"	0'- 9 3/4"	0'- 6 1/2"	9'- 8"	-----	10'- 1"	40	24	41.872	1.109	107.220	11'- 6"	6	11'- 2"	1	6	1.820	86.907	1.810	67.089	F
4	6	4	12"	3'- 5 1/8"	0'- 7 1/4"	1'- 8 3/4"	0'- 9 3/4"	0'- 6 1/2"	9'- 8"	-----	10'- 1"	40	30	43.990	1.182	126.478	11'- 6"	6	11'- 2"	1	7	1.919	90.358	1.899	67.089	H
5	3	4	11"	4'- 1 5/8"	0'- 9 1/2"	1'- 11 1/4"	1'- 7 5/8"	0'- 8 3/4"	11'- 8"	-----	12'- 3"	48	12	44.316	1.260	115.440	13'- 6"	6	13'- 2"	1	4	1.768	92.020	1.774	79.105	B
5	4	4	11"	4'- 1 5/8"	0'- 9 1/2"	1'- 11 1/4"	1'- 7 5/8"	0'- 8 3/4"	11'- 8"	-----	12'- 3"	48	18	46.434	1.333	121.826	13'- 6"	6	13'- 2"	1	5	1.867	95.471	1.867	79.105	D
5	5	4	11"	4'- 1 5/8"	0'- 9 1/2"	1'- 11 1/4"	1'- 7 5/8"	0'- 8 3/4"	11'- 8"	-----	12'- 3"	48	24	48.552	1.407	128.211	13'- 6"	6	13'- 2"	1	6	1.966	98.923	1.959	79.105	F
5	6	4	11"	4'- 1 5/8"	0'- 9 1/2"	1'- 11 1/4"	1'- 7 5/8"	0'- 8 3/4"	11'- 8"	-----	12'- 3"	48	30	50.670	1.480	143.478	13'- 6"	6	13'- 2"	1	7	2.065	102.374	2.052	79.105	H
5	7	4	11"	4'- 1 5/8"	0'- 9 1/2"	1'- 11 1/4"	1'- 7 5/8"	0'- 8 3/4"	11'- 8"	-----	12'- 3"	48	36	52.788	1.553	161.033	13'- 6"	6	13'- 2"	1	8	2.164	105.825	2.145	79.105	J
6	4	4	9"	4'- 10"	1'- 0"	2'- 1 1/2"	1'- 4 1/2"	0'- 11 1/4"	13'- 8"	-----	14'- 5"	56	18	53.114	1.706	167.999	15'- 6"	6	15'- 2"	1	5	1.998	107.487	2.004	91.121	E
6	5	4	9"	4'- 10"	1'- 0"	2'- 1 1/2"	1'- 4 1/2"	0'- 11 1/4"	13'- 8"	-----	14'- 5"	56	24	55.232	1.780	174.370	15'- 6"	6	15'- 2"	1	6	2.097	110.939	2.097	91.121	G
6	6	4	9"	4'- 10"	1'- 0"	2'- 1 1/2"	1'- 4 1/2"	0'- 11 1/4"	13'- 8"	-----	14'- 5"	56	30	57.350	1.853	182.712	15'- 6"	6	15'- 2"	1	7	2.196	114.390	2.190	91.121	I
6	7	4	9"	4'- 10"	1'- 0"	2'- 1 1/2"	1'- 4 1/2"	0'- 11 1/4"	13'- 8"	-----	14'- 5"	56	36	59.468	1.926	207.093	15'- 6"	6	15'- 2"	1	8	2.295	117.841	2.282	91.121	K
6	8	4	9"	4'- 10 1/4"	0'- 11 1/2"	2'- 2"	1'- 3 3/4"	0'- 10 3/4"	13'- 8"	-----	14'- 5"	56	42	61.586	1.956	213.820	15'- 6"	6	15'- 2"	1	9	2.387	121.293	2.368	91.121	L
7	4	5	8"	5'- 6 3/8"	1'- 2 5/8"	2'- 3 3/8"	1'- 8 1/8"	1'- 1 3/4"	15'- 8 1/8"	-----	16'- 7"	64	18	59.794	2.141	222.404	17'- 6"	6	17'- 2"	1	5	2.080	119.503	2.092	103.137	E
7	6	4	8"	5'- 6 1/2"	1'- 2 1/4"	2'- 4 1/8"	1'- 7 5/8"	1'- 1 1/2"	15'- 8 1/8"	-----	16'- 7"	64	30	64.030	2.264	219.206	17'- 6"	6	17'- 2"	1	7	2.285	126.406	2.285	103.137	I
7	8	4	8"	5'- 6 1/2"	1'- 2 1/4"	2'- 4 1/8"	1'- 7 5/8"	1'- 1 1/2"	15'- 8 1/8"	-----	16'- 7"	64	42	68.266	2.409	263.597	17'- 6"	6	17'- 2"	1	9	2.483	133.309	2.471	103.137	M
7	10	5	9"	5'- 7 5/8"	1'- 2 1/8"	2'- 4 3/8"	1'- 7 3/8"	1'- 1 1/4"	15'- 10 1/8"	-----	16'- 9"	64	54	72.502	2.607	329.667	17'- 6"	6	17'- 2"	1	11	2.609	140.211	2.584	103.137	Q
8	4	6	9"	6'- 3 3/8"	1'- 4 1/4"	2'- 7 1/8"	1'- 10 1/4"	1'- 3 1/4"	17'- 7 1/8"	-----	18'- 8"	72	18	66.474	2.525	286.118	19'- 6"	6	19'- 2"	1	5	2.166	131.519	2.185	115.153	E
8	6	5	9"	6'- 3"	1'- 4 3/8"	2'- 6 1/8"	1'- 10 1/2"	1'- 3 1/2"	17'- 7 1/8"	-----	18'- 8"	72	30	70.710	2.701	279.873	19'- 6"	6	19'- 2"	1	7	2.355	138.422	2.362	115.153	I
8	8	5	9"	6'- 2 7/8"	1'- 4 5/8"	2'- 6 5/8"	1'- 10 7/8"	1'- 3 3/4"	17'- 7 1/8"	-----	18'- 9"	72	42	74.946	2.873	328.974	19'- 6"	6	19'- 2"	1	9	2.544	145.325	2.538	115.153	M
8	10	5	9"	6'- 4"	1'- 4 3/8"	2'- 6 3/8"	1'- 10 1/2"	1'- 3 1/2"	17'- 9 7/8"	-----	18'- 10"	72	54	79.182	3.071	386.982	19'- 6"	6	19'- 2"	1	11	2.670	152.227	2.651	115.153	Q
9	4	6	9"	6'- 11 3/8"	1'- 7"	2'- 9 1/4"	2'- 2 1/8"	1'- 6"	19'- 8"	-----	20'- 11"	80	18	73.154	3.103	315.087	21'- 6"	6	21'- 2"	1	5	2.200	143.535	2.226	127.169	F
9	6	6	9"	6'- 11 1/2"	1'- 6 3/4"	2'- 9 1/2"	2'- 1 7/8"	1'- 5 3/4"	19'- 8"	-----	20'- 11"	80	30	77.390	3.219	332.025	21'- 6"	6	21'- 2"	1	7	2.409	150.438	2.422	127.169	J
9	8	6	9"	6'- 11 5/8"	1'- 6 1/2"	2'- 9 3/4"	2'- 1 1/2"	1'- 5 1/2"	19'- 8"	-----	20'- 10"	80	42	81.626	3.333	375.157	21'- 6"	6	21'- 2"	1	9	2.617	157.341	2.618	127.169	N
9	10	6	9"	7'- 3 3/4"	1'- 6 1/4"	2'- 10"	2'- 1 1/8"	1'- 5 1/4"	19'- 10"	-----	21'- 0"	80	54	85.862	3.530	428.648	21'- 6"	6	21'- 2"	1	11	2.742	164.243	2.730	127.169	R
9	12	6	9"	7'- 1 7/8"	1'- 7"	2'- 9 1/4"	2'- 2 1/8"	1'- 6"	20'- 1"	-----	21'- 4"	80	66	90.098	3.924	495.159	21'- 6"	6	21'- 2"	1	13	2.751	171.146	2.725	127.169	V
10	4	6	8"	7'- 7 3/8"	1'- 9 1/4"	2'- 11 3/4"	2'- 5 3/8"	1'- 8 1/4"	21'- 8"	-----	23'- 1"	88	18	79.834	3.678	376.694	23'- 6"	6	23'- 2"	1	5	2.206	155.551	2.238	139.185	F
10	6	6	8"	7'- 8"	1'- 9"	3'- 0"	2'- 5"	1'- 8"	21'- 8"	-----	23'- 0"	88	30	84.070	3.791	395.118	23'- 6"	6	23'- 2"	1	7	2.416	162.454	2.436	139.185	J
10	8	6	8"	7'- 8"	1'- 9"	3'- 0"	2'- 5"	1'- 8"	21'- 8"	-----	23'- 0"	88	42	88.306	3.936	444.336	23'- 6"	6	23'- 2"	1	9	2.614	169.357	2.621	139.185	N
10	10	6	9"	7'- 9"	1'- 9"	3'- 0"	2'- 5"	1'- 8"	21'- 10"	-----	23'- 2"	88	54	92.542	4.165	520.837	23'- 6"	6	23'- 2"	1	11	2.726	176.259	2.720	139.185	R
10	12	6	9"	7'- 10 1/2"	1'- 9"	3'- 0"	2'- 5"	1'- 8"	22'- 1"	-----	23'- 5"	88	66	96.778	4.469	583.261	23'- 6"	6	23'- 2"	1	13	2.764	183.162	2.745	139.185	V
12	6	7	9"	9'- 1 1/4"	2'- 1 1/8"	3'- 5 3/4"	2'- 10 5/8"	1'- 11 1/8"	25'- 8"	-----	27'- 4"	104	30	97.430	5.019	566.571	27'- 6"	6	27'- 2"	1	7	2.396	186.486	2.429	163.217	K
12	8	6	9"	9'- 1 1/4"	2'- 1"	3'- 5 3/8"	2'- 10 3/8"	2'- 0"	25'- 8 1/8"	-----	27'- 4"	104	42	101.666	5.169	539.946	27'- 6"	6	27'- 2"	1	9	2.593	193.389	2.614	163.217	O
12	10	7	9"	9'- 2 1/2"	2'- 1 1/8"	3'- 5 3/4"	2'- 10 5/8"	1'- 11 7/8"	25'- 10 1/2"	-----	27'- 6"	104	54	105.902	5.423	637.604	27'- 6"	6	27'- 2"	1	11	2.679	200.291	2.686	163.217	S
12	12	7	9"	9'- 3 5/8"	2'- 1 3/8"	3'- 5 1/2"	2'- 11"	2'- 1 1/8"	26'- 1"	-----	27'- 9"	104	66	110.138	5.748	745.475	27'- 6"	6	27'- 2"	1	13	2.717	207.194	2.712	163.217	W

STRUCTURE AND BRIDGE DIVISION

DOUBLE BOX CULVERTS

40 TO 45 FT. FILLS

VIRGINIA DEPARTMENT OF TRANSPORTATION

1003.23